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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,417	12/15/2003	Eiichi Terada	13693	6336
7590 ORUM & ROTH 53 W. JACKSON BLVD CHICAGO, IL 60604		04/05/2007	EXAMINER WEISKOPF, MARIE	
			ART UNIT	PAPER NUMBER
			3661	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/737,417

Applicant(s)

TERADA, EIICHI

Examiner

Marie A. Weiskopf

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 recites the limitation "based on the one parameter alone" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is unclear as to what "the one parameter" is referring to although examiner assumes it means the steering angle.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US004609064A) in view of Kagawa et al (US 5,906,645).

Per claim 2, Suzuki teaches a drive system switching control method of a four-wheeled vehicle for switching two drive systems including the steps of detecting a steering angle and a vehicle speed (30, 40; figure 6A), comparing the detected steering angle and vehicle speed with a corresponding relationship and analyzing a

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predetermined drive system switching to determine whether or not it is allowed (see figure 6B), and inhibiting the drive system switching if the switching is not allowed (column 5, line 58 – column 6, line 5). Suzuki, however, fails to disclose inhibiting the drive system from switching both from two to four and four to two wheel drive modes if it is determined that the drive system switching is not allowed. Suzuki only specifically discloses inhibiting the drive system from being changed from the four-wheel drive mode to the two-wheel drive mode. Suzuki et al discusses the fact that steering is done differently depending on which drive mode the vehicle is in, two or four wheel. For four-wheel drive mode, the vehicle is turned with the tendency to understeer due to the effect of the tight corner break. In two-wheel drive mode, the vehicle is turned in the condition of neutral steer. (Column 5, lines 40-43) It would have been obvious to one having ordinary skill in the art at the time of the invention to recognize that inhibiting the drive system switching from both two to four and four to two wheel drive modes would be beneficial due to the teaching of Suzuki which states that if the cornering characteristic of the vehicle is changed while the vehicle is running at high speeds there is a greater possibility that the vehicle will be oversteered, or the directional control of the vehicle will be lost. (Column 5, lines 43-49) This also is based upon the steering angle of the vehicle as discussed in Suzuki. Suzuki fails to specifically disclose inhibiting the drive system manual switching step. Suzuki does disclose, as discussed above, inhibiting the drive system from being changed from the four-wheel drive mode to the two-wheel drive mode as it is unsafe. Kagawa et al discloses a method of inhibiting switching of drive states of the vehicle when the vehicle is determined to be in an unsafe state. (Column

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1, lines 44-55) It would have been obvious to one having ordinary skill in the art at the time of the invention to combine the inability to manually switch states when in an unsafe driving state as discussed in Kabawa et al with the system of Suzuki. Although Kabawa et al is switching from an auto-drive mode to a manual mode, it is still manually switching the vehicle and the steering angle is taken into consideration and it would have been obvious to do this when switching from four-wheel drive mode to two-wheel drive mode or vice versa when determined it is unsafe.

Per claim 3, Suzuki teaches a drive system switching control method of a four-wheeled vehicle for switching two drive systems including the steps of detecting a steering angle and a vehicle speed (30, 40; figure 6A), comparing the detected steering angle and vehicle speed with a corresponding relationship and analyzing a predetermined drive system switching to determine whether or not it is allowed in correspondence to the vehicle speed (see figure 6B), and inhibiting the drive system switching if the switching is not allowed (column 5, line 58 – column 6, line 5). Suzuki, however, fails to disclose inhibiting the drive system from switching both from two to four and four to two wheel drive modes if it is determined that the drive system switching is not allowed. Suzuki only specifically discloses inhibiting the drive system from being changed from the four-wheel drive mode to the two-wheel drive mode. Suzuki et al discusses the fact that steering is done differently depending on which drive mode the vehicle is in, two or four wheel. For four-wheel drive mode, the vehicle is turned with the tendency to understeer due to the effect of the tight corner break. In two-wheel drive mode, the vehicle is turned in the condition of neutral steer. (Column 5, lines 40-

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43) It would have been obvious to one having ordinary skill in the art at the time of the invention to recognize that inhibiting the drive system switching from both two to four and four to two wheel drive modes would be beneficial due to the teaching of Suzuki which states that if the cornering characteristic of the vehicle is changed while the vehicle is running at high speeds there is a greater possibility that the vehicle will be oversteered, or the directional control of the vehicle will be lost. (Column 5, lines 43-49) This also is based upon the steering angle of the vehicle as discussed in Suzuki. Suzuki fails to specifically disclose inhibiting the drive system manual switching step. Suzuki does disclose, as discussed above, inhibiting the drive system from being changed from the four-wheel drive mode to the two-wheel drive mode as it is unsafe. Kagawa et al discloses a method of inhibiting switching of drive states of the vehicle when the vehicle is determined to be in an unsafe state. (Column 1, lines 44-55) It would have been obvious to one having ordinary skill in the art at the time of the invention to combine the inability to manually switch states when in an unsafe driving state as discussed in Kabawa et al with the system of Suzuki. Although Kabawa et al is switching from an auto-drive mode to a manual mode, it is still manually switching the vehicle and the steering angle is taken into consideration and it would have been obvious to do this when switching from four-wheel drive mode to two-wheel drive mode or vice versa when determined it is unsafe.

***Allowable Subject Matter***

6. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

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7. The following is a statement of reasons for the indication of allowable subject matter: the prior art, individually or in combination, fails to disclose, teach or suggest detecting a steering angle and inhibiting the drive system switching based on the steering angle alone as to whether the detected steering angle is over a predetermined angle. The prior art also takes makes the decision dependent upon speed also and not steering angle alone.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie A. Weiskopf whose telephone number is (571) 272-6288. The examiner can normally be reached on Monday-Thursday between 7:00 AM and 5:30 PM.

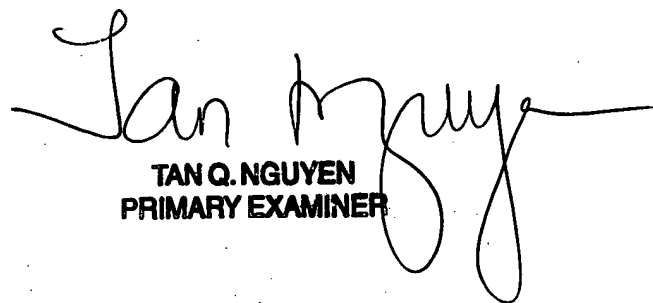
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW

  
**TAN Q. NGUYEN**  
**PRIMARY EXAMINER**